

## CLAIMS

1. An interactive teaching and learning device which comprises
  - a 3D body (1) to be touched which is fastened to the adjacencies by means of at least one
  - multiple-component force-torque measurement device (2),
  - an electronic storage and evaluation system,
  - an optic-visual and/or acoustic indicating device, whereby
  - the force-torque measurement device converts the forces and moments arising when the model body is touched into electrical measurement signals to be leaded to the electronic storage and evaluation unit, while
  - a mathematical model of the geometry of the 3D body is implemented in the electronic storage and evaluation unit,
  - and
  - an algorithm which on the basis of the forces and torques detected when the touch is carried out calculates the contact zone at the 3D body, which is communicated to the touching operator as signal by means of the optic-visual and/or acoustic indicating device.
  
2. A teaching and learning device which comprises
  - a 3D body (1) to be touched which is fastened to the adjacencies by at least one
  - multiple-component force-torque measurement device (2),
  - an electronic storage and evaluation unit,
  - an optic-visual and/or acoustic indicating device, whereby
  - the force-torque measurement device converts the forces and moments arising when the model body is touched into electrical measurement signals to be leaded to the electronic storage and evaluation unit,

- force-torque measurement signals of predetermined contact points are stored in the memory of the electronic storage and evaluation unit, and
  - an assignment algorithm is implemented which based on the detected forces and torques assigns the contact zone at the 3D body which is communicated to the touching operator as signal by means of the optic-visual and/or acoustic indicating device.
3. A teaching and learning device according to claim 1 or 2 characterized in that the optic-visual indicating device comprises a projector projecting visual data, such as texts or images, directly to the area touched.
  4. A teaching and learning device according to claim 3 characterized in that the projector is a video projector.